REMARKS

This document is submitted in reply to the Office Action dated May 21, 2008 ("Office Action").

Applicants have added new claims 23-26. Support for these new claims can be found in the Specification at page 14, line 25 and pages 16, lines 30. Applicants have also amended the Specification to comply with the Examiner's request. No new matter has been introduced.

Upon entry of these amendments, claims 1-26 will be pending and under examination. Applicants respectfully request that the Examiner reconsider this application, as amended, in view of the following remarks.

Objection to the Specification

The Examiner objects to the Specification for including minor spelling and grammatical errors and requests correction. See the Office Action, page 2, lines 3-7. Applicants have amended the Specification to correct these errors.

The Examiner also objects to the Abstract and the Invention Summary on the ground that Plant component (C), which is described in detail in the Specification, is not mentioned either in the Abstract or in the Invention Summary and requests correction. See the Office Action, page 2, lines 7-10

Applicants have amended both the Abstract and the Invention Summary to point out that the water-absorbent resin composition described therein can include a plant component (C).

Objection to claims

The Examiner objects to claim 1, 8, and 10 on the ground that "the word toward [recited therein] is confusing." See the Office Action, page 2, lines 13-16. Applicants respectfully disagree.

All three claims recite the phrase "absorption capacity at 60 minutes **toward** 0.90 mass% sodium chloride aqueous solution under the pressure of 1.9 kPa" (emphasis added).

It has been held that where well-known language is conventionally used, such is not objectionable since one of ordinary skill in the art would be apprised of the scope of the claim in view of the terminology used. See, e.g., *In re Kamal*, 158 USPQ 320, 322 (CCPA 1968). The term "toward" is conventionally used. A skilled artisan would know that the this term refers to the absorption capacity recited in the objected-to claims under a pressure of 1.9 kPa at 60 minutes ***to*** a 0.9 mass% aqueous sodium chloride solution as "to" is a synonym of "towards."

Rejection under 35 U.S.C. § 103 (a)

Claims 1-22 are rejected for obviousness on two grounds. Applicants address each ground independently below.

I

The Examiner rejects claims 1-6 and 10-21 for being obvious over Anderson et al., US Patent 4,954,562 ("Anderson"), in view of Yamada et al., European Patent 0,282,287 or alternatively over Yamada in view of Anderson. See the Office Action, page 3, lines 9-11. Claims 1 and 10, the only two independent claims, are discussed separately.

A

Claim 1 covers a water-absorbent resin composition that has a capacity of not less than 20 g/g for absorbing, at 60 minutes under a pressure of 1.9 kPa (AAP value), a 0.90 mass % sodium chloride aqueous solution. This composition has two components: (1) a resin obtained by polymerizing an unsaturated monomer having an acid group and/or a salt thereof, and (2) a zinc and silicon or zinc and aluminum complex oxide hydrate, wherein the mass ratio of the content of zinc and the content of silicon or aluminum is in the range of 50/50 - 99/1.

Anderson discloses improved water-absorbing, crosslinked acrylate resins that are prepared by aqueous polymerization. Anderson also discloses that the water-absorbing resins are polymerized in the presence of a metal oxide. See the Abstract. Anderson is silent as to the AAP value of the resin being not less than 20 g/g.

The Examiner asserts that the Anderson resin "is substantially similar in composition and preparation to the resin described in the instant application, and it is therefore suggested that it would display **similar inherent properties** such as absorption capacity." See the Office Action, page 3, lines 21-24.[1]

Applicants would like to first point out a difference between the Anderson resin and the claimed composition. As discussed above, the Anderson resin is polymerized in the presence of a metal oxide, the metal oxide becoming part of the resin itself. In view of this teaching, the Anderson resin and metal oxide clearly form a **single polymeric molecule**. This is not the case in the composition of claim 1. Indeed, the present Specification, an aid for interpreting the claim at issue, points out that it is only after component (1) has undergone polymerization that it is mixed with component (2). See page 29, lines 1-14. In other words, in view of the Specification a skilled artisan would know that the resin and metal oxide composition of claim 1 is a **mixture**, not a **single polymeric molecule**. Thus, the Anderson resin is fundamentally distinguishable from the resin composition of claim 1.

Applicants would like to further point out that, contrary to the Examiner's assertion, the AAP value required by claim 1 is not an inherent property of the Anderson resin. As shown in Example 1 and Comparative Examples 1 to 3 of the present Specification (pages 66 and 69-70), the AAP values of the compositions prepared in these four examples were vastly different. The composition prepared in Example 1 has an AAP value of 32 (see Table 2, page 76), while the compositions prepared in each of the

[1] Applicants would like to point out that absorption capacity is not the same as absorption capacity under pressure (AAP value). Indeed, as shown in Tables 1 and 2 of the present Specification, AAP values do not always correlate with absorption capacity. Thus, even if Anderson teaches a way of improving a resin's absorption capacity (which Applicants do not concede) such an improvement would not provide a means by which its AAP value could be increased. Nor would such an improvement suggest an AAP value of not less than 20 g/g as required by claim 1.

Comparative Examples 1 to 3 have AAP values ranging from 12-18. Yet, the only difference between the composition prepared in Example 1 and each of the compositions prepared in the three comparative examples were neutralizing ratio (Comparative Example 1), particle diameter distribution (Comparative Example 2), or surface crosslinking (Comparative Example 3). In other words, even though all four compositions were substantially similar in both their make-up and preparation, their AAP values were considerably different.

In sum, contrary to the Examiner's position, Example 1 and Comparative Example 1 to 3 show that a substantial similarity "in composition and preparation" does not result in end-products having similar AAP values. Clearly, the Examiner's reliance on so-called "**similar inherent properties**" is misplaced.

Applicants now turn to Yamada. As correctly pointed out by the Examiner, this reference "teaches a deodorizer which is a complex metal oxide hydrate of the composition SiO_2 (5-80 mole%), $MO_{n/2}$ (5-65 mole%), Al2O3 (0-60 mole%), where M may be zinc." See the Office Action, page 5, lines 17-19. Put differently, this reference does not disclose a water-absorbent resin composition having two components, let alone a composition that has an AAP value of not less than 20 g/g. Thus, Yamada does not make up for the deficiency of Anderson.

For the reasons and facts set forth above, Applicants submit that claim 1 is not rendered obvious by Anderson and Yamada. Nor are claims 2-6 and 11-21, all of which depend from claim 1.

B

Turning to independent claim 10, this claim covers a method for producing water-absorbent resin composition. This method includes two steps: (1) obtaining a water-absorbent resin having not less than 20 g/g of absorption capacity at 60 minutes toward 0.90 mass% sodium chloride aqueous solution under the pressure of 1.9kPa through a step of polymerizing an unsaturated monomer containing an acid group, and (2) mixing the water-absorbent resin and complex oxide hydrate containing zinc and silicon, or zinc and aluminum.

As shown in Examples 1-11 of the Specification (pages 66-69), after mixing a water-absorbent resin having an AAP value of not less than 20 g/g with a complex oxide hydrate containing zinc and silicon, or zinc and aluminum, the resultant composition has an AAP value similar to the resin prior to mixing. In view of this teaching, a skilled artisan would understand that the method of claim 10 produces a water-absorbent resin composition that has an AAP value of not less than 20 g/g.

As discussed above, Anderson is silent as to the AAP value of the water absorbent resin described therein, let alone it being not less that 20 g/g. As also discussed above, Yamada does not suggest a water-absorbent resin having an AAP value of not less than 20 g/g. Nor does this reference suggest that mixing such a resin with a complex metal oxide would result in a composition having an AAP value of not less than 20 g/g.

For the reasons and facts set forth above, Applicants submit that Anderson and Yamada in combination do not render claim 10 obvious.

C

Even if a prima facie case of obviousness against claims 1 and 10 had been established based on the combination of Anderson and Yamada (which Applicants do not concede), it can be successfully rebutted by a showing of unexpected results provided in the declaration of Yasuhisa Nakashima ("Declaration").

As set forth in MPEP § 2145, an applicant can rely on evidence showing that the claimed invention yields **unexpectedly** improved properties or properties not present in the prior art to rebut an obviousness rejection. Further, the law is well settled that "[w]hen unexpected results are used as evidence of nonobviousness, the results must be shown to be unexpected compared with **the closest prior art**;" emphasis added. See *Pfizer v. Apotex*, 480 F.3d 1348, 1370 (Fed. Cir., 2007).

In this Office Action, the Examiner relies on Anderson to teach a composition, including a resin and complex metal oxide, and relies on Yamada to teach a deodorizer that is a complex metal oxide hydrate. As the claimed composition includes a resin and complex metal oxide, clearly Anderson is **the closes prior art**.

As pointed out in the Declaration, the procedure described in Example 1 of Anderson was followed using N,N-dimethlaminoethylacrylatemethylchloride quaternary salt as the polyquaternary amine. Following this procedure, a water-absorbent resin was obtained. Under a pressure of 1.9 kPa, the AAP value of this resin was determined. The test used to determine the AAP value of the Anderson resin is identical to that used in Example 1 of the present application. Following that Example, the AAP values of twelve resin compositions, ranging from 21-32 g/g, were determined. Under these same conditions, the AAP of the Anderson resin was determined to be 14 g/g. The value of 14 g/g is significantly lower than the 12 resin compositions determined following Example 1 of the present application, i.e., 21-32 g/g. It is also well below the lower limit of 20 g/g recited in claims 1 and 10.

Applicants submit that the data presented in the Declaration successfully rebuts the presumed obviousness rejection of claims 1-6, and 10-21 based on the combination of Anderson and Yamada.

II

The Examiner also rejects claims 1, 4, 6-10, 12-14 and 22 for being obvious over Anderson and Yamada, in view of Tyrrell et al., US 2002/0120242 ("Tyrrell"), in further view of Qin et al.,US Patent 6,951,895 ("Qin 1") and Qin et al., US 2005/0027268 ("Qin 2"). See the Office Action, page 7, lines 10-13. Among the rejected claims, claims 1, 8, and 10 are independent.

As discussed above, claim 1 covers a composition, i.e., a mixture of a water absorbent resin and a complex metal oxide, which has an absorption capacity, measured under a pressure of 1.9 kPa, of not less than 20 g/g to a 0.90 mass% aqueous sodium chloride solution.

As also discussed above, neither Anderson nor Yamada suggests a composition that is a mixture of a resin and metal oxide, let alone that the composition has an AAP value of not less than 20 g/g as required by claim 1.

Turning to Tyrrell, the Examiner correctly points out that this reference discloses absorbent articles that use both absorbent resins (e.g., Sanwet 3900 and Favor SXM 880,

relied on by the Examiner) and deodorizing additives. See the Office Action, page 8, lines 1-7. However, Tyrell does not disclose the AAP values of the two exemplary resins or disclose use of complex metal oxides as deodorizing additives. Tyrell also does not disclose that it is suitable to mix complex metal oxides with Sanwet 3900 or Favor SXM 880 resins. Nor does it disclose that the resultant mixture has an AAP value of not less than 20 g/g. In other words, this reference fails to disclose a composition including a water absorbent resin and a complex metal oxide that has an AAP value of not less than 20 g/g, as required by claim 1.

The Examiner relies on Qin 1 and Qin 2 to show that the Sanwet 3900 and Favor SXM 880 resins have AAP values of not less than 20 g/g. However, neither of these two references teaches that mixing such a resin with a complex metal oxide would result in a composition that would have an AAP value of not less than 20 g/g, as required by claim 1. In short, neither of these two references cures the deficiency of Tyrrell. Clearly, the Examiner's reliance on Qin 1 and Qin 2 is misplaced.

For the reasons and facts set forth above, Applicants submit that Anderson and Yamada, in combination with Tyrell, Qin 1, and Qin 2 do not render claim 1 obvious. Nor does their combination render obvious claims 4, 6-7, 9, and 12-14, all of which depend from claim 1.

Applicants now turn to independent claim 8. This claim covers an absorbent material for a sanitary product including: (1) a water-absorbent resin, having an AAP value of not less than 20 g/g, obtainable by polymerizing an unsaturated monomer containing an acid group and/or a salt thereof, (2) a hydrophilic fiber, and (3) a complex oxide hydrate containing zinc and silicon, or zinc and aluminum, wherein the complex oxide hydrate contains zinc as main metal component and the mass ratio of the content of zinc and the content of silicon or aluminum is in the range of 50/50 - 99/1.

Example 11 of the Specification (page 73) shows that an absorbent material, which include a resin having an AAP value of not less than 20 g/g, a complex metal oxide, and a fiber, has an AAP value similar to that of the resin prior to mixing. Clearly a

skilled artisan would know that the material of claim 8 also has an AAP value of not less than 20 g/g.

None of the cited references disclose mixing a resin, a complex metal oxide, and a fiber, let alone that the resultant mixture has an AAP value of not less that 20 g/g. Therefore, Applicants submit that Anderson and Yamada, in combination with Tyrrell, Qin 1, and Qin 2 does not render claim 8 obvious.

Finally, Applicants discuss claim 10. As pointed out above, this claim covers a method for producing water-absorbent resin composition. This composition retains the AAP value of the resin after being mixed with a complex metal oxide. In other words, the resultant mixture obtained by the method of claim 10 has an AAP value of not less than 20 g/g. As discussed above, none of the cited references disclose a method of making a water absorbent resin composition that has an AAP value of not less than 20 g/g. Thus, Anderson and Yamada, in combination with Tyrrell, Qin 1, and Qin 2 does not render claim 10 obvious.

New claims

New claims 23-24, depend from claim 1 and new claim 25-26 depend from claim 10.

For the same reasons set forth above, these new claims are patentable over Anderson and Yamada, or, alternatively, over Anderson and Yamada, in combination with Tyrrell, Qin 1, and Qin 2.

CONCLUSION

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment.

In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed.

Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

The Petition for Extension of Time fee in the amount of $ 490 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization.

Please apply any other charges or credits to Deposit Account No. 50-4189, referencing Attorney Docket No. 60004-111US1.

Respectfully submitted,

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